

What is claimed is:

1 1. A cathode substrate of a carbon nanotube (CNT) field
2 emission display, comprising:

3 a glass substrate;

4 a cathode layer formed overlying the glass substrate,
5 wherein the surface of the cathode layer is defined as a
6 plurality of electron-emitting areas spaced apart from each
7 other;

8 an insulating layer formed overlying the glass substrate
9 and having an opening, wherein the opening exposes the cathode
10 layer;

11 a gate electrode layer formed overlying the top of the
12 insulating layer and exposing the cathode layer; and

13 a CNT structure formed overlying the cathode layer,
14 wherein the CNT structure comprises a plurality of sub-CNT
15 structures arranged in array;

16 wherein, the sub-CNT structures are formed overlying the
17 plurality of electron-emitting areas respectively; and

18 wherein, the sub-CNT Structures are spaced apart from each
19 other without the insulating layer therebetween.

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1 2. The cathode substrate according to claim 1, wherein the
2 interval of two adjacent electron-emitting areas is 80~150
3 μm .

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1 3. The cathode substrate according to claim 2, wherein the
2 profile of the electron-emitting area is quadrilateral,
3 circular or any other physical appearance.

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1 4. A cathode substrate of a carbon nanotube (CNT) field
2 emission display, comprising:

3 a glass substrate;

4 a cathode layer formed overlying the glass substrate,
5 wherein the surface of the cathode layer is defined as a
6 plurality of electron-emitting areas spaced apart from each
7 other, and the electron-emitting areas are uniform and
8 arranged in array;

9 an insulating layer formed overlying the glass substrate
10 and having an opening, wherein the opening exposes the cathode
11 layer;

12 a gate electrode layer formed overlying the top of the
13 insulating layer and exposing the cathode layer; and

14 a CNT structure formed overlying the cathode layer,
15 wherein the CNT structure comprises a plurality of sub-CNT
16 structures arranged in array;

17 wherein, the sub-CNT structures are formed overlying the
18 plurality of electron-emitting areas respectively, such that
19 an edge effect is formed at the periphery of each sub-CNT
20 structures; and

21 wherein, the sub-CNT Structures are spaced apart from each
22 other without the insulating layer therebetween.

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1 5. The cathode substrate according to claim 4, wherein the
2 profile of the electron-emitting area is quadrilateral,
3 circular or any other physical appearance.

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